

TITLE: AIR-FLOW CONTROL VALVE DEVICE FOR A HELMET  
BACKGROUND OF THE INVENTION

(a) Technical Field of the Invention

The present invention relates to an air-flow control-valve device for a  
5 helmet, and in particular, an air-flow control valve device to provide warmth  
during the winter and cool during the summer. The device allows the  
adjustment of the valve gate (forward or backward) so as to achieve air-flow  
or warm-maintaining effect, which is suitable to various changes of  
temperature.

10 (b) Description of the Prior Art

Helmet is a device used to protect the driver while riding a motorcycle.  
It is known conventionally that there is no air-flow within the helmet and  
under the hot weather of the summer, the head of the wearer has to withstand  
the high temperature of the hot air.

15 In order to overcome the drawback of the helmet of the hot air within the  
helmet, a plurality of helmet with air-flow device have been exploited to fulfil  
the demand of the user. The applicant of the present application has also  
filed patent application in Germany with application number 295203145 and  
the application has been granted patent, and the air-flow feature of the helmet  
20 is excellent and the product is well-accepted and sold. However, the

drawback of this conventional helmet is the loss of warmth during the cold season. In particular, in countries like European countries, USA, China, etc, another helmet without air-flow device has to be ready during the cold season. The helmet without air-flow device will not fully provide sufficient warm to  
5 the user as cold air can enter through the edge of the helmet. Accordingly, it is an object of the present invention to provide an air-flow valve device for a helmet, which mitigates the above drawbacks.

## SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide an air-flow control valve device for a helmet having a helmet body, supporting plate extended to form railing plate and a flow-guiding hood, comprising a valve  
5 body being a railing block having two sides mounted with a valve and the top end of the railing blocking being mounted with thread member, and the bottom section being a recessed rail allowing reciprocating of the railing plate of the supporting plate; the flow-guiding hood having a long opening at the top face of the helmet for the passage of the threaded member of the railing  
10 block and mounted with a pad, a C-shaped elastic plate to the threaded member and secured by a circular button having a screw hole, and the valve body being pushed by the circular button and positioned and the tension of the C-shaped elastic plate prevented the valve body from moving, and air hole provided to the end portion at the two sides of the helmet being mounted with  
15 a valve plate having a push block and a hood shell having a hole which allows the valve plate to move to stop and the passage of air; a warmth-keeping cover being a circular body made of a base cloth and foam by thermal press, the foam being a layer of circular pad body with edge mounted with a plurality of adhesive cloth for adhesion onto the inner frame edge of the helmet and  
20 blocking external air to enter the helmet.

Yet still another object of the present invention is to provide an air-flow control valve device for a helmet, wherein a rain-blocking plate is mounted at the two sides of the supporting plate and at the two sides of the valve to form into a gap allowing air to release, and the valve plate at the bottom end of the two sides of the helmet is pushable to provide an air hole for air stream that flow-in to form a convection current within the helmet, and the air within the helmet and the hot air are discharged via air holes to the air-passage hole and the large opening and via the valve and the gap between the rain-blocking plate to release.

Still a further object of the present invention is to provide an air-flow control valve device for a helmet, wherein the rain-blocking plates of the valve plate and the supporting plate are closed to prohibit air from releasing, and the valve plate at the end portion of the two sides of the helmet cuts the passage of air via air hole so as to keep the warmth within the helmet, and the hot air within the helmet allows to pass through various air hole to the large opening to the valve plate and the rain-blocking plate, and the air is stopped.

The foregoing object and summary provide only a brief introduction to the present invention. To fully appreciate these and other objects of the present invention as well as the invention itself, all of which will become apparent to those skilled in the art, the following detailed description of the

invention and the claims should be read in conjunction with the accompanying drawings. Throughout the specification and drawings identical reference numerals refer to identical or similar parts.

Many other advantages and features of the present invention will become  
5 manifest to those versed in the art upon making reference to the detailed description and the accompanying sheets of drawings in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIGS. 1 and 1A are perspective exploded views of the air-porous helmet of the present invention.

FIG. 2 is a schematic perspective view showing air-flow at the valve  
5 body of the helmet of the present invention.

FIG. 3 is a sectional schematic view showing air-flow at the valve body of the helmet of the present invention.

FIG. 4 is a schematic perspective view showing air-blocking at the valve body of the helmet of the present invention.

10 FIG. 5 is a sectional schematic view showing air-blocking at the valve body of the helmet of the present invention.

FIG. 6 is a perspective sectional view of the warmth-keeping cover of the present invention.

FIG. 7 shows the sectional schematic view showing air-blocking at the  
15 valve body together with the warmth-keeping cover in accordance with the present invention.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The following descriptions are of exemplary embodiments only, and are not intended to limit the scope, applicability or configuration of the invention in any way. Rather, the following description provides a convenient

5 illustration for implementing exemplary embodiments of the invention.

Various changes to the described embodiments may be made in the function and arrangement of the elements described without departing from the scope of the invention as set forth in the appended claims.

FIGS. 1 and 1A show an air-flow valve device for a helmet. The larger  
10 opening 101 of the top end of the helmet body 10 is provided with an air-flow control valve device 20 at the rear end of the large opening 101. The air-flow control valve body device 20 has a supporting plate extended with a railing plate 21a. The two sides of the supporting plate 201 are provided with a rain-blocking plate 201b, which can prevent rainwater from entering the large  
15 opening 101. The supporting plate 201 is also used to enhance the exertion force of the flow-directing hood 40. The valve body 202 of the device 20 is a railing block 202a and the two lateral sides are provided with a valve gate 202b. The top end of the railing block 202a is a threaded member 202d, and the bottom section is a recessed rail 202c for the reciprocating movement of  
20 the railing plate 201a of the supporting plate 201. The flow-directing hood

40 is provided with a long hole 401 at the top face of the helmet. The long hole 401 allows the threaded member 202d of the railing block 202a to pass through, and a pad 30, a C-shaped elastic plate 31 are placed onto the threaded member 202d of the railing block 202a. After that, a circular button 32  
5 having a threaded hole is used to fasten with the threaded member 202d and by pushing the circular button 32, the valve body 202 is moved to a position for securing. The top tension of the C-shaped elastic plate 31 prevents the movement of the valve body 202.

The bottom end portion at the two lateral sides of the helmet is provided  
10 with an air-flow hole 103. The air-flow hole 103 is protruded with a pushing block 501 and a hood shell 502 having a hole 502a. The hole 502a of the hood shell 502 can be blocked by the pushing block 501 of the valve plate 50 so as to allow air flow or to stop air flow.

Referring to FIG. 6, there is shown a warmth keeping cover 70 provided  
15 to the device. The cover 70 is a circular body made from base cloth material and foam. The form layer is formed into a circular pad body 701, and the circumferential edge of the pad body 701 is provided with an adhesive edge 702, and the adhesive edge 702 is spacedly mounted with adhesive 703 which  
20 can be adhered to the inner frame edge of the helmet, blocking external air from entering and therefore a warmth keeping effect is obtained.



FIGS. 2 and 3 are perspective view and sectional schematic view showing the air-flow state of the air-flow control valve device in accordance with the present invention. As shown in the figure, when the circular button 32 is pushed forward, the railing block 202a moves together, the valve gate 202b at the two lateral sides of the railing block 202a and the rain-blocking plate 201b at the two lateral sides of the supporting plate 201 form a gap allowing hot air to release. The valve plate 50 at the end portion of the two sides of the helmet 10 is pushed by the pushing block 501 to expose the air hole 103 allowing the air to flow into the interior of the helmet, forming a convection current (as shown in FIG. 3). The air within the helmet and the hot air will flow via the large opening 101 of the hole path 601 via various air holes 60 and then released, and pass through the gap between the valve gate 202b and the rain-blocking plate 201b to release.

FIGS. 4 and 5 are perspective view and sectional schematic view showing the air-blocking situation of the valve device of the present invention. As shown in the figure, the circular button 32 is pushed backward and the railing block 202a is moved together. The valve gate 202b and the rain-blocking plate 201b at the two lateral sides of the supporting plate 201 are closed together and sealed to stop air from discharging. The valve plate 50 at the bottom section of the two lateral sides of the helmet 10 makes use of the

pushing block 501 to close the air hole 103 so that air will not flow in, forming into a sealed warmth-keeping interior of the helmet. Referring to FIG. 5, the hot air within the helmet can only be discharged via various air holes 60 to the air path 601 and via the large opening 101 to the valve body 202. The gap  
5 between the valve gate 202b and the rain-blocking plate 201b is blocked and therefore the air-flow is stopped and the warmth air is kept.

FIG. 6 is a sectional schematic view showing the warmth keeping cover the present invention. The cover 70 is a circular body made from base cloth material and foam. The form layer is formed into a circular pad body 701,  
10 and the circumferential edge of the pad body 701 is provided with an adhesive edge 702, and the adhesive edge 702 is spacedly mounted with adhesive 703, which can be adhered to the inner frame edge of the helmet.

FIG. 7 is a sectional schematic view of the air-blocking situation of the control valve body with the warmth-keeping cover. As shown in the figure,  
15 when at an extremely cold weather, a warmth-keeping cover 70 is needed and the edge 702 is spacedly mounted with a plurality of adhesive 703 to mount onto the internal edge of the helmet so as to fully cut off the external air to enter the helmet. The effect of the warmth keeping is obtained and there is no loss of heat from the head of the user.

20 In view of the above, it is understood that the helmet of the present

invention provides a warm effect during a cold surrounding weather and a cooler effect in a hot weather.

It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods  
5 differing from the type described above.

While certain novel features of this invention have been shown and described and are pointed out in the annexed claim, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device  
10 illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.